

SEQUENCE LISTING

<110> Spaete, Richard
Jackman, Winthrop

<120> NON SPLICING VARIANTS OF GP 350/220

<130> 7682-109-999

<140>

<141>

<150> 09/724,418

<151> 2000-11-28

<150> 09/556,706

<151> 2000-04-24

<150> 08/229,291

<151> 1994-04-18

<150> 08/917,320

<151> 1997-08-25

<150> 08/783,774

<151> 1997-01-15

<160> 19

<170> PatentIn version 3.0

<210> 1

<211> 5931

<212> DNA

<213> Epstein-Barr Virus

<400> 1

gaattccata	aatgaaacac	gctggtcagg	tggtaaaact	tcctcccaga	ttttcgtgag	60
gctcctgtgt	atagccatat	agtcaaagaa	aatactgtag	cggggattac	agctctgtac	120
aatgtttacc	acggagctct	gaacatacaa	ccactggcga	tcccgggggg	tacatcgcg	180
cagcttaaa	gtgccggcgg	aaaagggtcac	gtgacacct	cggccacctg	tgcacccaag	240
tgctgcctgg	agatgtacga	atgtgggagt	cgtctggtga	tcggtgtagc	tgtacatcca	300
gctgctgtat	gcctggtaac	ccataggcca	tccggcggcc	agggtttgca	gtctccattt	360
ggcctgatct	ctacgagaag	ctggatttct	ccgacgatct	ctaattggcct	gtcgaatggc	420
catggcatat	attatgtaca	tctcggtatt	tgaaatctgg	atccgaaaaa	ctgggtctatg	480
gctcgtgtgt	cgatgcgctg	aaaccaacgg	caacaaatta	cttaccttgt	tggttgtgtga	540
tgggtaaaaa	cacacatcac	acacttaggc	catagggatg	ctcaccgtag	ccgcggctcc	600
aatcgcttga	agaagtgttc	ttagatctag	tggaaacctg	cggagaatgg	cttctcgccc	660
aggagatccc	ggctgggggtg	ggagcatggg	tcgtgctgga	gctgaccac	cggcatcatg	720
atcgaccgcg	tttctcttcg	tacccttctg	ggccggctcc	aggtgggcat	cttctgcttc	780
cttttctgag	ctgctatctg	ataactctat	gaggacattt	tcccaatctc	ccgccgatac	840
ctgttctctg	acaaccgagg	tagatgggac	ttcttcttcc	atgttgtcat	ccagggccgg	900
gggacccggc	ctgtccttgt	ccattttgtc	tgcaacaaaa	gtgtgactct	ccaacaccgc	960
accccccttg	tacctattaa	agaggatgct	gcctagaaat	cggtgccgag	acaatggagg	1020
cagccttgct	tgtgtgtcag	tacaccatcc	agagcctgat	ccatctcaag	ggtgaagatc	1080
ctggtttttt	caatgttgag	attccggaat	tcccatttta	ccccacatgc	aatgtttgca	1140
cggcagatgt	caatgtaact	atcaatttgc	atgtcggggg	caaaaagcat	caacttgatc	1200
ttgacttttg	ccagctgaca	ccccatacga	aggctgtcta	ccaacctcga	ggtgcatttg	1260
gtggctcaga	aaatgccacc	aatctctttc	tactggagct	ccttggtgca	ggagaattgg	1320
ctctaactat	gcgggtctaag	aagcttccaa	ttaacgtcac	caccggagag	gagcaacaag	1380
taagcctgga	atctgtagat	gtctactttc	aagatgtgtt	tggaaccatg	tggtgccacc	1440

atgcagaaat	gcaaaacccc	gtgtacctga	taccagaaac	agtgccatac	ataaagtggg	1500
ataactgtaa	ttctaccaat	ataacggcag	tagtgagggc	acaggggctg	gatgtcacgc	1560
tacccttaag	tttgccaacg	tcagctcaag	actcgaattt	cagcgtaaaa	acagaaatgc	1620
tcggtaatga	gatatatatt	gagtgatatta	tggaggatgg	cgaaatttca	caagtctctgc	1680
ccggagacaa	caaattttaac	atcacctgca	gtggatagca	gagccatggt	cccagcggcg	1740
gaattctcac	atcaacgagt	cccgtggcca	ccccaatacc	tggtacaggg	tatgcataca	1800
gcctgcgtct	gacaccacgt	ccagtgtcac	gatttcttgg	caataacagt	atcctgtacg	1860
tgttttactc	tgggaatgga	ccgaaggcga	gcgggggaga	ttactgcatt	cagtccaaca	1920
ttgtgttctc	tgatgagatt	ccagcttcac	aggacatgcc	gacaaacacc	acagacatca	1980
catatgtggg	tgacaatgct	acctattcag	tgccaatggt	cacttctgag	gacgcaaact	2040
cgccaaatgt	tacagtgact	gccttttggg	cctggccaaa	caacactgaa	actgacttta	2100
agtgc aaatg	gactctcacc	tcggggacac	cttcgggttg	tgaaaatatt	tctggtgcat	2160
ttgcgagcaa	tcggacattt	gacattactg	tctcgggtct	tggcacggcc	cccaagcac	2220
tcattatcac	acgaacggct	accaatgcc	ccacaacaac	ccacaagggt	atattctcca	2280
aggcaccgga	gagcaccacc	acctccccta	ccttgaatac	aactggattt	gctgatccca	2340
atacaacgac	aggtctaccc	agctctactc	acgtgcctac	caacctcacc	gcacctgcaa	2400
gcacaggccc	cactgtatcc	accgcggatg	tcaccagccc	aacaccagcc	ggcacaacgt	2460
caggcgcac	accggtgaca	ccaagtccat	ctccatggga	caacggcaca	gaaagtaagg	2520
ccccgcacat	gaccagctcc	acctcaccag	tgactacccc	aacccccaaat	gccaccagcc	2580
ccaccccagc	agtgactacc	ccaacccc aa	atgccaccag	ccccacccca	gcagtgacta	2640
ccccaacccc	aatgcccacc	agccccacct	tgggaaaaac	aagtcctacc	tcagcagtga	2700
ctaccccac	cccaaattgc	accagcccca	ccttgggaaa	aacaagcccc	acctcagcag	2760
tgactacccc	acccccaaat	gccaccagcc	ccaccttggg	aaaaacaagc	cccacctcag	2820
cagtgactac	cccaacccca	aatgccaccg	gccttactgt	gggagaaaca	agtccacagg	2880
caaatgccac	caaccacacc	ttaggaggaa	caagtccac	cccagtagtt	accagccaac	2940
caaaaaatgc	aaccagtgtc	gttaccacag	gccaacataa	cataacttca	agttcaacct	3000
cttccatgtc	actgagaccc	agttcaaacc	cagagacact	cagccccctc	accagtgcac	3060
attcaacgtc	acatatgcct	ttactaacct	ccgtccaccc	aacaggtggg	gaaaatataa	3120
cacaggtgac	accagcctct	atcagcacac	atcatgtgtc	caccagttcg	ccagaacccc	3180
gcccaggcac	caccagccaa	gcgtcaggcc	ctggaaacag	ttccacatcc	acaaaaaccg	3240
gggaggttaa	tgtcaccaaa	ggcacgcccc	cccaaatgc	aacgtcgccc	caggccccca	3300
gtggccaaaa	gacggcggtt	cccacggtca	cctcaacagg	tggaaaggcc	aattctacca	3360
ccggtggaaa	gcacaccaca	ggacatggag	ccgggacaag	tacagagccc	accacagatt	3420
acggcggtga	ttcaactacg	ccaagaccga	gatacaatgc	gaccacctat	ctacctccca	3480
gcacttctag	caaactgcgg	ccccgctgga	cttttacgag	cccaccgggt	accacagccc	3540
aagccaccgt	gccagtcccg	ccaacgtccc	agcccagatt	ctcaaacctc	tccatgctag	3600
tactgcagtg	ggcctctctg	gctgtgctga	cccttctgct	gctgctggtc	atggcgggact	3660
gcgcctttag	gcgtaacttg	tctacatccc	atacctacac	cacccccacca	tatgatgacg	3720
ccgagaccta	tgtattaaag	tcaataaaaa	tttattaatc	agaatttgca	ctttcttttg	3780
ttcacgtccc	cgggagcggg	agcgggcacg	tcgggtggcg	ttggggctcg	ttgattctcg	3840
tggctggtgt	ccctcaccag	ggctgggttg	gccttttgca	cccaacatag	atacttgaat	3900
gcggagggtc	agattttgca	atataatttc	catttcattg	cgggtagtta	caccgtcaac	3960
agattttcga	accttgtctt	caatcttctt	catagcctga	gacgccaaac	ggcccgtggc	4020
ctgcgtaatc	attacctctc	gctgtcgagc	tgtaagcggc	tcaggcggag	gcactggagc	4080
agaaggaaca	gaggtagacg	aggcacaggc	acccccctctg	aggacctgtt	gcttcagagc	4140
cttattctca	gactccaggc	gagccaggcg	ggcggccatg	tcttccatgc	tcatgtcaac	4200
agccttaaca	gaaggcaatc	tgactttgcg	tggagctgac	atgctattgg	tttaacgagc	4260
agagaagaag	tacaaacagc	cgagattgct	gcccccttta	aatatcccca	tctaaccctg	4320
cagcagcgtg	ttcaciaaact	tgttaaagca	gacgtacatc	aggtagatgg	ctgaggctat	4380
aatgactaag	acaagcgtca	gaagtgccca	gatggaggca	aagctgggtca	aagaaggcga	4440
gaatgtgtcc	gcattacatg	tgtaggagta	gaactgggtc	tgggcttcag	tcagggaagc	4500
cgccgccgcg	tttgtgggac	tgggaagcgc	ggccggcagc	accccggtca	gaagccaggt	4560
ggcgggcaggg	aagagcagtg	gcacagcctt	tgcaaacggc	tttcttagga	ccttccccat	4620
ttcgcagtaa	agagagccgg	gtcttgggct	cttatatata	gcgcgcgcgt	ccctgtctgt	4680
tagatcatca	ccatggaggc	ctgtccacac	atacgtctacg	ccttccagaa	tgacaagctg	4740
ttgctccagc	aggagctcaa	aatccacctg	gctgccttca	gatatgccac	ccccctgctg	4800
cgcccgatga	agaccacaac	tgtggaccta	ggcctctatg	cccgcccacc	cgagggtcat	4860
gggctcatga	tgtggggcag	cacctcccgt	ccggcacagt	ctcatgttgg	catcatcgat	4920
ccggctatca	cgggggaact	ccggctaatic	ctcgagaatc	agcggcgcta	caactccacg	4980
ctgcgtccat	cggagctcaa	aatccacctg	gctgccttca	gatatgccac	cccccagatg	5040
gaggaggaca	aggttcccat	caaccacccc	cagtaccccg	gggacgtggg	cctggacgtc	5100

```

tctttgccaa aggacctggc cctcttcccc catcagaccg tctcagtgac actcaccgtg 5160
cccccccctt ctatccctca ccacaggccg acaatctttg gcaggtcggg cctggccatg 5220
cagggtattc tagtgaagcc ctgcagggtg cgccgggggtg ggggtggacgt cagcctgacc 5280
aacttttagtg accagaccgt gttccttaac aagtaccggc gcttctgtca gcttggttac 5340
cttcacaagc accacctcac ctcccttctac agccccacac gtgacgcggg ggtccttggc 5400
cccagatctc tcttttaggtg ggccagctgc accttcgagg aggtgccgag cctggccatg 5460
ggatgatagt ggctgagcga ggcgctcgag gggagacagg ggaggggggt tggatcctcg 5520
ggatcaatgac accttcatat cccttggttt accaataaaa tggtttattg gtgtggagtc 5580
tggttgctac gttaacgcga gctccgtggg cccagagtgc tccggctgcc gcaccacggg 5640
aggcgggtgca aggacggggg tgggcacctc gggctcaaag gcggagttga tgaaaggggc 5700
cgaggctgag ggggcgggtc cccgatgagac aacggccgag atctcttgcg cccaggcacc 5760
ggctctgctc atcttgagcg ccgtggccac cttctccatc tccatcaggg ccaggctgtc 5820
gccagcctgt ttgtccagca gggccttgag cccattctcg tccatctcga tgccgcttac 5880
agccagagag atcatggtat tccagatgac tgagcgcacg gcctcaagct t 5931

```

```

<210> 2
<211> 878
<212> PRT
<213> Epstein-Barr Virus

```

```

<400> 2
Met Glu Ala Ala Leu Leu Val Cys Gln Tyr Thr Ile Gln Ser Leu Ile
1 5 10 15
His Leu Thr Gly Glu Asp Pro Gly Phe Phe Asn Val Glu Ile Pro Glu
20 25 30
Phe Pro Phe Tyr Pro Thr Cys Asn Val Cys Thr Ala Asp Val Asn Val
35 40 45
Thr Ile Asn Phe Asp Val Gly Gly Lys Lys His Gln Leu Asp Leu Asp
50 55 60
Phe Gly Gln Leu Thr Pro His Thr Lys Ala Val Tyr Gln Pro Arg Gly
65 70 75 80
Ala Phe Gly Gly Ser Glu Asn Ala Thr Asn Leu Phe Leu Leu Glu Leu
85 90 95
Leu Gly Ala Gly Glu Leu Ala Leu Thr Met Arg Ser Lys Lys Leu Pro
100 105 110
Ile Asn Val Thr Thr Gly Glu Glu Gln Gln Val Ser Leu Glu Ser Val
115 120 125
Asp Val Tyr Phe Gln Asp Val Phe Gly Thr Met Trp Cys His His Ala
130 135 140
Glu Met Gln Asn Pro Val Tyr Leu Ile Pro Glu Thr Val Pro Tyr Ile
145 150 155 160
Lys Trp Asp Asn Cys Asn Ser Thr Asn Ile Thr Ala Val Val Arg Ala
165 170 175
Gln Gly Leu Asp Val Thr Leu Pro Leu Ser Leu Pro Thr Ser Ala Gln
180 185 190
Asp Ser Asn Phe Ser Val Lys Thr Glu Met Leu Gly Asn Glu Ile Asp
195 200 205
Ile Glu Cys Ile Met Glu Asp Gly Glu Ile Ser Gln Val Leu Pro Gly
210 215 220
Asp Asn Lys Phe Asn Ile Thr Cys Ser Gly Tyr Glu Ser His Val Pro
225 230 235 240
Ser Gly Gly Ile Leu Thr Ser Thr Ser Pro Val Ala Thr Pro Ile Pro
245 250 255
Gly Thr Gly Tyr Ala Tyr Ser Leu Arg Leu Thr Pro Arg Pro Val Ser
260 265 270
Arg Phe Leu Gly Asn Asn Ser Ile Leu Tyr Val Phe Tyr Ser Gly Asn
275 280 285
Gly Pro Lys Ala Ser Gly Gly Asp Tyr Cys Ile Gln Ser Asn Ile Val
290 295 300
Phe Ser Asp Glu Ile Pro Ala Ser Gln Asp Met Pro Thr Asn Thr Thr
305 310 315 320

```

Asp	Ile	Thr	Tyr	Val	Gly	Asp	Asn	Ala	Thr	Tyr	Ser	Val	Pro	Met	Val	
				325					330					335		
Thr	Ser	Glu	Asp	Ala	Asn	Ser	Pro	Asn	Val	Thr	Val	Thr	Ala	Phe	Trp	
			340					345					350			
Ala	Trp	Pro	Asn	Asn	Thr	Glu	Thr	Asp	Phe	Lys	Cys	Lys	Trp	Thr	Leu	
		355					360					365				
Thr	Ser	Gly	Thr	Pro	Ser	Gly	Cys	Glu	Asn	Ile	Ser	Gly	Ala	Phe	Ala	
	370					375					380					
Ser	Asn	Arg	Thr	Phe	Asp	Ile	Thr	Val	Ser	Gly	Leu	Gly	Thr	Ala	Pro	
385					390					395					400	
Lys	Thr	Leu	Ile	Ile	Thr	Arg	Thr	Ala	Thr	Asn	Ala	Thr	Thr	Thr	Thr	
			405					410							415	
His	Lys	Val	Ile	Phe	Ser	Lys	Ala	Pro	Glu	Ser	Thr	Thr	Thr	Ser	Pro	
		420						425					430			
Thr	Leu	Asn	Thr	Thr	Gly	Phe	Ala	Asp	Pro	Asn	Thr	Thr	Thr	Gly	Leu	
		435					440					445				
Pro	Ser	Ser	Thr	His	Val	Pro	Thr	Asn	Leu	Thr	Ala	Pro	Ala	Ser	Thr	
	450					455					460					
Gly	Pro	Thr	Val	Ser	Thr	Ala	Asp	Val	Thr	Ser	Pro	Thr	Pro	Ala	Gly	
465					470					475					480	
Thr	Thr	Ser	Gly	Ala	Ser	Pro	Val	Thr	Pro	Ser	Pro	Ser	Pro	Trp	Asp	
			485					490							495	
Asn	Gly	Thr	Glu	Ser	Lys	Ala	Pro	Asp	Met	Thr	Ser	Ser	Thr	Ser	Pro	
		500						505					510			
Val	Thr	Thr	Pro	Thr	Pro	Asn	Ala	Thr	Ser	Pro	Thr	Pro	Ala	Val	Thr	
	515					520						525				
Thr	Pro	Thr	Pro	Asn	Ala	Thr	Ser	Pro	Thr	Pro	Ala	Val	Thr	Thr	Pro	
	530					535					540					
Thr	Pro	Asn	Ala	Thr	Ser	Pro	Thr	Leu	Gly	Lys	Thr	Ser	Pro	Thr	Ser	
545					550					555					560	
Ala	Val	Thr	Thr	Pro	Thr	Pro	Asn	Ala	Thr	Ser	Pro	Thr	Leu	Gly	Lys	
			565					570						575		
Thr	Ser	Pro	Thr	Ser	Ala	Val	Thr	Thr	Pro	Thr	Pro	Asn	Ala	Thr	Ser	
		580						585					590			
Pro	Thr	Leu	Gly	Lys	Thr	Ser	Pro	Thr	Ser	Ala	Val	Thr	Thr	Pro	Thr	
	595						600					605				
Pro	Asn	Ala	Thr	Gly	Pro	Thr	Val	Gly	Glu	Thr	Ser	Pro	Gln	Ala	Asn	
	610					615					620					
Ala	Thr	Asn	His	Thr	Leu	Gly	Gly	Thr	Ser	Pro	Thr	Pro	Val	Val	Thr	
625					630					635					640	
Ser	Gln	Pro	Lys	Asn	Ala	Thr	Ser	Ala	Val	Thr	Thr	Gly	Gln	His	Asn	
			645					650						655		
Arg	Pro	Ser	Ser	Asn	Pro	Glu	Thr	Leu	Ser	Pro	Ser	Thr	Ser	Asp	Asn	
		660						665					670			
Ser	Thr	Ser	His	Met	Gly	Gly	Glu	Asn	Ile	Thr	Gln	Val	Thr	Pro	Ala	
	675						680					685				
Ser	Ile	Ser	Thr	His	His	Val	Ser	Thr	Ser	Ser	Pro	Glu	Pro	Arg	Pro	
	690					695					700					
Gly	Thr	Thr	Ser	Gln	Ala	Ser	Gly	Pro	Gly	Asn	Ser	Ser	Thr	Ser	Thr	
705					710					715					720	
Lys	Pro	Gly	Glu	Val	Asn	Val	Thr	Lys	Gly	Thr	Pro	Pro	Gln	Asn	Ala	
			725					730						735		
Thr	Ser	Pro	Gln	Ala	Pro	Ser	Gly	Gln	Lys	Thr	Ala	Val	Pro	Thr	Val	
		740						745					750			
Thr	Ser	Thr	Gly	Gly	Lys	Ala	Asn	Ser	Thr	Thr	Gly	Gly	Lys	His	Thr	
	755						760					765				
Thr	Gly	His	Gly	Ala	Arg	Thr	Ser	Thr	Glu	Pro	Thr	Thr	Asp	Tyr	Gly	
	770					775					780					
Gly	Asp	Ser	Thr	Thr	Pro	Arg	Pro	Arg	Tyr	Asn	Ala	Thr	Thr	Tyr	Leu	
785					790					795					800	

[illegible]

<213> Epstein-Barr Virus

<400> 9
atctgacag atccttaa 18

<210> 10
<211> 39
<212> DNA
<213> Epstein-Barr Virus

<400> 10
ccgcgtcagg cggctactggt catgatcgta cctctccaa 39

<210> 11
<211> 13
<212> PRT
<213> Epstein-Barr Virus

<400> 11
Ala Cys Asp Ala Met Val Leu Val Leu Met Ser Leu Asn
1 5 10

<210> 12
<211> 30
<212> DNA
<213> Epstein-Barr Virus

<400> 12
ggatcttgat cagatatcgt acctctccaa 30

<210> 13
<211> 5
<212> PRT
<213> Epstein-Barr Virus

<400> 13
Leu Met Ser Leu Asn
1 5

<210> 14
<211> 24
<212> DNA
<213> Epstein-Barr Virus

<400> 14
ccgcgtcaga togtacctct ccaa 24

<210> 15
<211> 8
<212> PRT
<213> Epstein-Barr Virus

<400> 15
Ala Cys Asp Leu Met Ser Leu Asn
1 5

<210> 16
<211> 42
<212> DNA
<213> Epstein-Barr Virus

<400> 16	
ggatcatgtcg ggggcctttg actctgtgcc gttgtcccat gg	42
<210> 17	
<211> 42	
<212> DNA	
<213> Epstein-Barr Virus	
<400> 17	
ggatcatgtcg ggggccttac tttctgtgcc gttgtcccat gg	42
<210> 18	
<211> 42	
<212> DNA	
<213> Epstein-Barr Virus	
<400> 18	
ctgtgttata ttttcacctc cagttgggtg agcggaggtt ag	42
<210> 19	
<211> 42	
<212> DNA	
<213> Epstein-Barr Virus	
<400> 19	
ctgtgttata ttttcaccac ctgttgggtg agcggaggtt ag	42